**Background & study objective**

- Problematic smartphone use (PSU) is an emerging but understudied public health challenge.
- Emerging research has suggested PSU as a psychopathological disorder resembling behavioural addiction and is linked to health problems including anxiety and depression [1].
- Very little is known about the impact of PSU on family functioning or family relationship quality, which influence individual and family health.
- We examined the association of PSU with perceived family well-being of Chinese general adults in Hong Kong, where population smartphone penetration is amongst the highest globally (85.6% in 2016).

**Methods**

**Study design**
- **Hong Kong Family Health and Information Trend Survey (HK-FHInT)**
  - A regular, territory-wide, population-based, cross-sectional telephone survey under the FAMILY project (www.family.org.hk/en).
  - Administered by a Public Opinion Programme, the University of Hong Kong, a reputable local agency survey.
  - Random sampling by a 2-stage probability-based procedure.
  - Eligibility criteria: Cantonese-speaking Hong Kong residents aged 18 years or above.

**Measures**

**Outcome**
- Assessed by perceived family well-being scale, developed based on 2 local qualitative studies on family well-being under the FAMILY project [4,5].
- Three items measuring family harmony/ healthiness/happiness (3H’s) on a scale of 0 to 10
  - Higher total score (0 to 30) denotes favourable family well-being
  - Correlated well with other indicators of family functioning with satisfactory internal and test-retest reliability [6]

**Exposure**
- Assessed by Smartphone Addiction Scale-Short version (SAS-SV) [2].
- Validated in Chinese with satisfactory psychometric properties [3].
- Ten 6-point Likert, negatively-worded items, summed to give an overall score ranging from 10 to 60
  - Higher score indicates PSU
  - Cutoffs of 31+ (male) and 33+ (female) define high risk of PSU

**Statistical analyses**

- All data were weighted by age, gender and education level distribution of Hong Kong general population.
- Multivariable linear regression was used to compute regression coefficients (b) of perceived family well-being score in relation to SAS-SV score and other sociodemographic factors (Table).

**Results**

- A weighted sample of 3195 respondents was analysed.
- Mean (SD) age = 43.2 (15.6) years, 54.8% female.
- Mean (SD) perceived family well-being score = 22.1 (4.6).

**Discussion & conclusion**

- This study found that PSU was associated with poor perceived family well-being in Chinese adults in the general population.
- Results remained robust after controlling for sociodemographic factors and were corroborated by a sensitivity analysis.
- Overuse of smartphone (e.g. internet gaming) may reduce quality time spent with other family members, leading to poor perceived family well-being.

**Limitations**
- Strengths
  - Large and population-representative sample
  - Cross-sectional, self-reported data
  - Uncertain applicability of the findings in other populations
- Further studies on other factors and adverse health and other effects of PSU on individual and families are warranted.

**Keywords:** smartphone addiction, family, population study

**Conflict of interest:** None declared

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**References:**
3. Luk et al. JMIR Preprints. 2017; DOI: 10.2196/preprints.9730